



Dart Aerospace Ltd.  
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Hawkesbury, ON  
K6A 1K7  
Canada

Tel (613) 632-5200

**D3211-1**  
**Job Sheet 178562**



Part No: D3211-1

Job Qty: 4 ea

Part Name: Bracket For Interior Window For -015 & -025



Part Weight: 0 lbs

Status: Scheduled

Priority: Medium

Job Created: 6/1/18

Job Tracking No:

Due Date: 6/22/18

Created By: Marie Lajeunesse

Type: SOLD

Description:

Note: DWG REV B IPP Rev:A New Issue 05-11-17 JLM IPP Rev:B Now on Waterjet 06-10-24 JLM

Ship Via:

### Bill of Materials

### Job Routing

| Op No | Operation          | Qty   | Start Date | Due Date | Standard  |         | Workcenter/Supplier   |           | Sign-off     |
|-------|--------------------|-------|------------|----------|-----------|---------|-----------------------|-----------|--------------|
|       |                    |       |            |          | Setup hrs | Run Hrs | Workcenter / Supplier | Lead Time |              |
| 90    | Start up Operation | 4 Ea  | 6/22/18    | 6/22/18  | 0.00      | 0.00    | Start Up Waterjet     |           | SC 18/06/15  |
| 100   | Waterjet           | 4 pcs | 6/22/18    | 6/22/18  | 0.00      | 0.86    | Waterjet1             |           | SC 18/06/15  |
| 120   | QC                 | 4 pcs | 6/22/18    | 6/22/18  | 0.00      | 0.00    | QC8                   |           | 38           |
| 130   | Small Fab          | 4 pcs | 6/22/18    | 6/22/18  | 0.00      | 0.00    | Small Fab-3           |           | 9-85 SI      |
| 140   | Brake NC           | 4 pcs | 6/22/18    | 6/22/18  | 0.04      | 0.53    | Brake NC 1            |           | DAS SB       |
| 150   | QC                 | 4 pcs | 6/22/18    | 6/22/18  | 0.00      | 0.00    | QC5                   |           | 38           |
| 160   | HandFinish         | 4 pcs | 6/22/18    | 6/22/18  | 0.00      | 0.21    | HandFinish1           |           | SA 18-07-07  |
| 170   | Powdercoat         | 4 pcs | 6/22/18    | 6/22/18  | 0.00      | 0.13    | Powdercoat4           |           | DEB 18-07-13 |
| 180   | QC                 | 4 pcs | 6/22/18    | 6/22/18  | 0.00      | 0.00    | QC3                   |           | 38           |
| 190   | Packaging          | 4 pcs | 6/22/18    | 6/22/18  | 0.00      | 0.00    | Packaging3-1          | 54138     | JUL 16 2018  |
| 200   | QC21-SA            | 4 Ea  | 6/22/18    | 6/22/18  | 0.00      | 0.00    | QC21                  |           | 21           |

Part Op 100 - 1-Cut as per Dwg D3211

Descriptions: 130 - Deburr

140 - Bend D3211-1 Stack as per Dwg D3211

170 - START TIME: 9:10

M138700

FINISH: 9:40

TEMP: 320°

### Job BOM

| Part / Item  | Component Name     | Quantity             | Operation             | Container |
|--------------|--------------------|----------------------|-----------------------|-----------|
| M2024T3S.063 | 2024-T3 .063 Sheet | 5.6200 sf (1.405 ea) | 90-Start up Operation |           |

### Job Allocations

| Operation             | Component Part | Required | Inventory | Allocated |
|-----------------------|----------------|----------|-----------|-----------|
| 90-Start up Operation | M2024T3S.063   | 6        | 221       | 0         |

### Part Specifications

| Spec No | Description | Target/Tolerance               | Limits         | Type  | Special Comments |
|---------|-------------|--------------------------------|----------------|-------|------------------|
| 1       | Bracket     | 0.250inches ± 0.030            | 0.280<br>0.220 | 0,254 |                  |
| 2       | Bracket     | 1.910inches ± 0.030            | 1.940<br>1.880 | 1,916 |                  |
| 3       | Bracket     | 0.128inches + 0.005<br>- 0.000 | 0.133<br>0.128 | 0,128 |                  |
| 4       | Bracket     | 0.141inches                    | 0.146          | 0,142 |                  |

DQA: \_\_\_\_\_ Date: \_\_\_\_\_

## WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order update only ☐

|                                                              |                                               |  |                                        |                                     |                                              |                                      |  |  |
|--------------------------------------------------------------|-----------------------------------------------|--|----------------------------------------|-------------------------------------|----------------------------------------------|--------------------------------------|--|--|
| Work Order: _____<br><br>Part No. _____<br><br>NCR No. _____ | DISPOSITION                                   |  | AGAINST DEPARTMENT/PROCESS             |                                     |                                              |                                      |  |  |
|                                                              | Rework <input type="checkbox"/>               |  | Skid-tube <input type="checkbox"/>     | Cross tube <input type="checkbox"/> | Water Jet <input type="checkbox"/>           | Engineering <input type="checkbox"/> |  |  |
|                                                              | Scrap <input type="checkbox"/>                |  | Machining <input type="checkbox"/>     | Small Fab <input type="checkbox"/>  | Prod. Eng. Coord. <input type="checkbox"/>   | Quality <input type="checkbox"/>     |  |  |
|                                                              | Use-as-is <input type="checkbox"/>            |  | Thermoforming <input type="checkbox"/> | Finishing <input type="checkbox"/>  | Rec/Store/Packaging <input type="checkbox"/> | Other <input type="checkbox"/>       |  |  |
|                                                              | Suspected Unapproved <input type="checkbox"/> |  | Large Fab <input type="checkbox"/>     | Composite <input type="checkbox"/>  | Supplier <input type="checkbox"/>            |                                      |  |  |

Date : \_\_\_\_\_ Step #: \_\_\_\_\_

**Description Work Order Deviation**

QTY Effective : \_\_\_\_\_

Part: D3211-1  
 Job No: 178562  
 Serial No/Batch: S081643

Container No: S081643  
 Revision: \_\_\_\_\_  
 Inspector: \_\_\_\_\_  
 Exp Date: \_\_\_\_\_  
 Instructions: \_\_\_\_\_

Date: 06/15/18

DART AEROSPACE  
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 CANADA  
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 Email: sales@dartaero.com  
 www.dartaerospace.com

QSI042) Approval  
 Completed By \_\_\_\_\_  
 Date / Supervisor \_\_\_\_\_  
 Initial Verification \_\_\_\_\_  
 Coordinator Approval \_\_\_\_\_

| Root Cause                                  |                                                |                                             |                                            |
|---------------------------------------------|------------------------------------------------|---------------------------------------------|--------------------------------------------|
| Environment <input type="checkbox"/>        | No Re-verification <input type="checkbox"/>    | Pressure/Force <input type="checkbox"/>     | Wrong Dimensions <input type="checkbox"/>  |
| Design <input type="checkbox"/>             | Operator <input type="checkbox"/>              | Bending <input type="checkbox"/>            | Under tolerance <input type="checkbox"/>   |
| Doc/Data <input type="checkbox"/>           | Offset/Setup <input type="checkbox"/>          | Centre Not Coi <input type="checkbox"/>     | Part Incorrect <input type="checkbox"/>    |
| Equip/Tooling <input type="checkbox"/>      | Supplier <input type="checkbox"/>              | Cracks <input type="checkbox"/>             | Part Lost/Missing <input type="checkbox"/> |
| Handling/Pre <input type="checkbox"/>       | Training <input type="checkbox"/>              | Crimp/Kink/Rip <input type="checkbox"/>     | Part Moved <input type="checkbox"/>        |
| Material <input type="checkbox"/>           | Use for Testing <input type="checkbox"/>       | Cuffs <input type="checkbox"/>              | Drawing <input type="checkbox"/>           |
| Internal Transport <input type="checkbox"/> | Poor Information <input type="checkbox"/>      | Crushing <input type="checkbox"/>           | Finish <input type="checkbox"/>            |
| Tribal Knowledge <input type="checkbox"/>   | Rushing <input type="checkbox"/>               | Heat Treat <input type="checkbox"/>         | Misread <input type="checkbox"/>           |
| LOA <input type="checkbox"/>                | Product Improvement <input type="checkbox"/>   | Wave/Twist in Tube <input type="checkbox"/> | Turning Sequence <input type="checkbox"/>  |
| Substation <input type="checkbox"/>         | Process Improvement <input type="checkbox"/>   | Marks/Chatter <input type="checkbox"/>      |                                            |
| Past Expiry Date <input type="checkbox"/>   | Manufacturing Process <input type="checkbox"/> |                                             |                                            |
| Misidentified <input type="checkbox"/>      | Past Due <input type="checkbox"/>              |                                             |                                            |
| OTHER : _____                               |                                                |                                             |                                            |

|   |         |                      |                  |        |
|---|---------|----------------------|------------------|--------|
|   |         | + 0.005              | 0.141            |        |
|   |         | - 0.000              |                  |        |
| 5 | Bracket | 17.710inches ± 0.030 | 17.740<br>17.680 | 17,715 |
| 6 | Bracket | 1.910inches ± 0.030  | 1.940<br>1.880   | 1,918  |
| 7 | Bracket | 1.560inches ± 0.030  | 1.590<br>1.530   | 1,567  |
| 8 | Bracket | 11.320inches ± 0.030 | 11.350<br>11.290 | 11,328 |

Plex 6/1/18 2:53 PM Dart.lajeunesse.marie



DQA: \_\_\_\_\_ Date: \_\_\_\_\_



## WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order update only ☐

|                                                              |                                                |                                                                                                                                                                                    |                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                               |  |                                                                                                                                                                           |  |  |
|--------------------------------------------------------------|------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|--|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|
| Work Order: _____<br><br>Part No. _____<br><br>NCR No. _____ |                                                | <b>DISPOSITION</b><br><br>Rework <input type="checkbox"/><br>Scrap <input type="checkbox"/><br>Use-as-is <input type="checkbox"/><br>Suspected Unapproved <input type="checkbox"/> |                                                            | <b>AGAINST DEPARTMENT/PROCESS</b><br><br><div style="display: flex; justify-content: space-between;"> <div>           Skid-tube <input type="checkbox"/><br/>           Machining <input type="checkbox"/><br/>           Thermoforming <input type="checkbox"/><br/>           Large Fab <input type="checkbox"/> </div> <div>           Cross tube <input type="checkbox"/><br/>           Small Fab <input type="checkbox"/><br/>           Finishing <input type="checkbox"/><br/>           Composite <input type="checkbox"/> </div> <div>           Water Jet <input type="checkbox"/><br/>           Prod. Eng. Coord. <input type="checkbox"/><br/>           Rec/Store/Packaging <input type="checkbox"/><br/>           Supplier <input type="checkbox"/> </div> <div>           Engineering <input type="checkbox"/><br/>           Quality <input type="checkbox"/><br/>           Other <input type="checkbox"/> </div> </div> |                                               |  |                                                                                                                                                                           |  |  |
| Date :                                                       |                                                | Step #:                                                                                                                                                                            |                                                            | QTY Effective :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                               |  | <b>MRB (QSI042) Approval</b><br><br><br><b>Completed By</b><br><br><br><b>Lead hand / Supervisor Approval Verification</b><br><br><br><b>QC / QA Coordinator Approval</b> |  |  |
| <b>Description Work Order Deviation</b>                      |                                                |                                                                                                                                                                                    |                                                            | <b>Disposition</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                               |  |                                                                                                                                                                           |  |  |
|                                                              |                                                |                                                                                                                                                                                    |                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                               |  |                                                                                                                                                                           |  |  |
|                                                              |                                                |                                                                                                                                                                                    |                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                               |  |                                                                                                                                                                           |  |  |
| <b>Root Cause</b>                                            |                                                | <b>FAULT CATEGORY</b>                                                                                                                                                              |                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                               |  |                                                                                                                                                                           |  |  |
| Environment <input type="checkbox"/>                         | No Re-verification <input type="checkbox"/>    | Pressure/Forced <input type="checkbox"/>                                                                                                                                           | Temperature/Cure <input type="checkbox"/>                  | Power Loss/Surge <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Positioned Wrong <input type="checkbox"/>     |  |                                                                                                                                                                           |  |  |
| Design <input type="checkbox"/>                              | Operator <input type="checkbox"/>              | Bending <input type="checkbox"/>                                                                                                                                                   | Set-up <input type="checkbox"/>                            | Folio/Program <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Outside Dimensions <input type="checkbox"/>   |  |                                                                                                                                                                           |  |  |
| Doc/Data <input type="checkbox"/>                            | Offset/Setup <input type="checkbox"/>          | Centre Not Concentric <input type="checkbox"/>                                                                                                                                     | BOM/Route <input type="checkbox"/>                         | Grain <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Over/Under tolerance <input type="checkbox"/> |  |                                                                                                                                                                           |  |  |
| Equip/Tooling <input type="checkbox"/>                       | Supplier <input type="checkbox"/>              | Cracks <input type="checkbox"/>                                                                                                                                                    | Broken/Damage/Defect <input type="checkbox"/>              | Weld <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Part Incorrect <input type="checkbox"/>       |  |                                                                                                                                                                           |  |  |
| Handling/Pre <input type="checkbox"/>                        | Training <input type="checkbox"/>              | Crimp/Kink/Ripple/Wave <input type="checkbox"/>                                                                                                                                    | Inspection Incomplete/Unqualified <input type="checkbox"/> | Wrong Stock Pulled <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Part Lost/Missing <input type="checkbox"/>    |  |                                                                                                                                                                           |  |  |
| Material <input type="checkbox"/>                            | Use for Testing <input type="checkbox"/>       | Cuffs <input type="checkbox"/>                                                                                                                                                     | Contamination <input type="checkbox"/>                     | Out of Sequence <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Part Moved <input type="checkbox"/>           |  |                                                                                                                                                                           |  |  |
| Internal Transport <input type="checkbox"/>                  | Poor Information <input type="checkbox"/>      | Crushing <input type="checkbox"/>                                                                                                                                                  | Countersink <input type="checkbox"/>                       | Off-set <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Drawing <input type="checkbox"/>              |  |                                                                                                                                                                           |  |  |
| Tribal Knowledge <input type="checkbox"/>                    | Rushing <input type="checkbox"/>               | Heat Treat <input type="checkbox"/>                                                                                                                                                | Cut Too Short <input type="checkbox"/>                     | Mislabeled <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Finish <input type="checkbox"/>               |  |                                                                                                                                                                           |  |  |
| LOA <input type="checkbox"/>                                 | Product Improvement <input type="checkbox"/>   | Wave/Twist in Tube <input type="checkbox"/>                                                                                                                                        | Instructions Incomplete/Unclear <input type="checkbox"/>   | Fit/Function <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Misread <input type="checkbox"/>              |  |                                                                                                                                                                           |  |  |
| Substation <input type="checkbox"/>                          | Process Improvement <input type="checkbox"/>   | Marks/Chatter <input type="checkbox"/>                                                                                                                                             | Drill Holes <input type="checkbox"/>                       | Misaligned/off center <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Turning Sequence <input type="checkbox"/>     |  |                                                                                                                                                                           |  |  |
| Past Expiry Date <input type="checkbox"/>                    | Manufacturing Process <input type="checkbox"/> | <b>OTHER :</b>                                                                                                                                                                     |                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                               |  |                                                                                                                                                                           |  |  |
| Misidentified <input type="checkbox"/>                       | Past Due <input type="checkbox"/>              |                                                                                                                                                                                    |                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                               |  |                                                                                                                                                                           |  |  |